# Chapter 25
# T3 Interfaces Monitoring and Troubleshooting

This chapter summarizes the command-line interface (CLI) commmands you can use to monitor and troubleshoot T3 interfaces.

## show interfaces (for T3 Interfaces)

**Syntax**

show interfaces t3-*fpc/pic/port* <brief | detail | extensive> <*interface-name* destination-class *destination-class-name*> <*interface-name* source-class *source-class-name*>

show interfaces t3-*fpc/pic/port* <brief | detail | extensive> <media>

show interfaces t3-*fpc/pic/port* <brief | detail | extensive> <statistics>

**Description**

Display status information about T3 router interfaces.

**Options**

none—Display information about all interfaces.

brief—(Optional) Display brief interface information.

detail—(Optional) Display detailed interface information.

extensive—(Optional) Display very detailed interface information.

destination-class *destination-class-name*—(Optional) Name of a logical grouping of prefixes that count packets having the destination address matching those prefixes. Whenever a destination class is specified, you must also specify a particular logical interface, not all interfaces.

t3-*fpc/pic/port*—Name of an interface.

media—(Optional) Display media-specific information about network interfaces.

source-class *source-class-name*—(Optional) Name of a logical grouping of prefixes that count packets having the source address matching those prefixes. Whenever a source class is specified, you must also specify a particular logical interface, not all interfaces.

statistics—(Optional) Display static interface statistics.

**Required Privilege Level**

view

**Sample Output**

show interfaces (standard) (for T3 interfaces) on page 429
show interfaces brief (for T3 interfaces) on page 429
show interfaces detail (for T3 interfaces) on page 430
show interfaces extensive (for T3 interfaces) on page 431
show interfaces media (for T3 interfaces) on page 432
show interfaces statistics (for T3 interfaces) on page 433

**Output Fields at a Glance**

Table 48 summarizes which information is included in the output fields of each show interfaces command option for T3 interfaces. In this table, output fields are listed in alphabetical order. In Table 49, the output fields are listed in more detail in the order in which they are displayed.

**Table 48: T3 Show Interfaces Output Field Summary**

| Options | Field Description |
|---|---|
| **Physical Interface** | |
| Extensive | ANSI LMI settings—Settings for link management can be either ANSI LMI settings or ITU LMI settings. ANSI LMI settings is the default. The format is ANSI LMI settings: *value, value... xx* seconds |
| All | Active alarms and Active defects—T3 media-specific defects that can render the interface unable to pass packets. |
| Detail Extensive | BERT time period—The configured total time period that the BERT test is to run. |
| Extensive | Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off. |
| Standard<br>Detail Extensive | CHAP state—Displays the state of the challenge-handshake protocol during its transaction. |
| All | Clocking—Reference clock source. It can be Internal or External. |
| All | Device Flags Field—Information about the physical device. |
| Extensive | Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off. |
| Detail Extensive | DS1 BERT Algorithm—Bit Error Rate Testing. |
| Detail Extensive | DS3 BERT configuration—The BERT (Bit Error Rate Test) checks the quality of the line. |
| Extensive | DS3 media—Counts of T3 media-specific errors. |
| Extensive | DSU configuration—Information about the DSU configuration. The last three lines (Bit count, Error bit count, and LOS information) are displayed only if a BERT test has ever been run on the interface. |
| Detail Extensive | Elapsed—Actual time elapsed since the start of the BERT. |
| All | Enabled Field—State of the interface. |
| All | FCS—Frame check sequence on the interface (either 16 or 32). |
| Extensive | Framing errors—Sum of AAL5 packets that have FCS errors, AAL5 packets that have reassembly timeout errors, and AAL5 packets that have length errors. |
| Extensive | Giants—Frames received that are larger than the giant threshold. |
| Extensive | HDLC configuration—Information about the HDLC configuration. |
| Detail Extensive | Hold-times—Current interface hold-time up and hold-time down, in milliseconds. |
| Extensive | ITU LMI settings—Settings for link management can be either ANSI LMI settings or ITU LMI settings. ANSI LMI settings is the default. The format is ITU LMI settings: *value, value... xx* seconds |
| Detail Extensive | Induced error rate—Configured rate at which the bit errors are induced in the BERT pattern. |
| Extensive | Input errors—Input errors on the interface. |
| Standard | Input rate, Output rate—Rate of bits and packets received and transmitted on the interface. |
| All | Interface Flags Field—Information about the interface. |
| All | Interface index—Physical interface's index number, which reflects its initialization sequence. |

| Options | Field Description |
|---|---|
| Extensive | Interface transmit queues—Name of the transmit queues and their associated statistics. |
| Standard | Keepalive Input, Output—Number of keepalive packets sent and received by PPP and how long ago the last keepalive packets were sent and received. |
| All | Keepalive settings—Configured settings for keepalives. |
| Detail Extensive | Keepalive statistics—Number of keepalive packets sent and received by PPP and how long ago the last keepalive packets were sent and received. |
| All | LCP state—Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| Extensive | LMI Statistics—Statistics about link management, including a count of packets sent and received, and the time of the last activity. |
| All | Last flapped—Date, time, and how long ago the interface went from down to up. |
| All | Link Flags Field—Information about the link. |
| All | Link-level type—Encapsulation being used on the physical interface. |
| All | Loopback—Whether loopback is enabled and the type of loopback (either local or remote). |
| All | Mode—Whether C-bit parity or M13 mode is enabled. |
| All | MTU—MTU size on the physical interface. |
| All | NCP state—Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| Extensive | Output errors—Output errors on the interface. |
| Extensive | PFE configuration—Information about how the Packet Forwarding Engine is configured. |
| All | Physical interface—Name of the physical interface. |
| Extensive | Runts—Frames received that are smaller than the runt threshold. |
| All | SNMP ifIndex—SNMP index number for the interface. |
| Detail Extensive | Source class—List of the names of source class usage (SCU) counters per family and per class for this interface. The counters display Packets and Bytes arriving from designated user-selected prefixes. |
| All | Speed—Speed at which the interface is running. |
| Detail Extensive | Statistics last cleared—Time when the statistics for the interface were last zeroed. |
| Detail Extensive | Traffic statistics—Total number of bytes and packets received and transmitted on the logical interface. These statistics are the sum of the local and transit statistics. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize. |
| **Logical Interface** | |
| All | Address flags—Information about the address. |
| All | Addresses—Addresses associated with the logical interface. |
| Detail Extensive | Broadcast—Broadcast address. |
| All | Destination—IP address of the remote side of the connection. |
| Detail Extensive | Destination class—List of the names of destination class usage (DCU) counters per family and per class for this interface. The counters display Packets and Bytes going to designated user-selected prefixes. |
| All | DLCI—If Frame Relay encapsulation is configured, the DLCI number of the logical interface. |
| All | Encapsulation—Encapsulation on the logical interface. |
| Standard | Input packets, Output packets—Number of packets received and transmitted on the logical interface. |
| Detail Extensive | Local statistics—Statistics for traffic received from and transmitted to the Routing Engine. |
| All | Local—IP address of the logical interface. |
| All | Logical interface flags—Information about the logical interface. |
| All | Logical interface, Index, SNMP ifIndex—Name of the logical interface, the logical interface's index number, and the logical interface's SNMP interface index number. |
| Detail Extensive | MTU Family Flags Field—Information about the protocol family flags. |

| Options | Field Description |
|---|---|
| All | MTU—MTU size on the logical interface. |
| All | Protocol—Protocol running on the logical interface. |
| Detail Extensive | Source class—List of the names of source class usage (SCU) counters per family and per class for this interface. The counters display Packets and Bytes arriving from designated user-selected prefixes. |
| Detail Extensive | Traffic statistics—Total number of bytes and packets received and transmitted on the logical interface. These statistics are the sum of the local and transit statistics. |
| Detail Extensive | Transit statistics—Statistics for traffic transiting the router. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize. |

**Table 49: T3 Show Interfaces Output Field Summary in Order of Appearance**

| Output Field | Output Field Description |
|---|---|
| **Physical Interface** | |
| Physical interface | Name of the physical interface. |
| Enabled | State of the interface. Possible values are described in "Enabled Field" on page 190. |
| Interface index | Physical interface's index number, which reflects its initialization sequence. |
| SNMP ifIndex | SNMP index number for the interface. |
| Generation | A unique number for use by Juniper Networks Customer Support only. |
| Link-level type | Encapsulation being used on the physical interface. |
| MTU | MTU size on the physical interface. |
| Clocking | Reference clock source. It can be Internal or External. |
| Speed | Speed at which the interface is running. |
| Loopback | Whether loopback is enabled and the type of loopback (local or remote). |
| Mode | Whether C-bit parity mode or M13 mode is enabled. |
| FCS | Frame check sequence on the interface (either 16 or 32). The default is 16-bit. |
| Framing | Physical layer framing format used on the link. It can be G704, G704-NO-CRC4, or Unframed. The default is G704. |
| Device flags | Information about the physical device. Possible values are described in "Device Flags Field" on page 190. |
| Interface flags | Information about the interface. |
| Link flags | Information about the link. Possible values are described in "Link Flags Field" on page 191. |
| LMI settings | (Extensive output only) Settings for link management can be either ANSI LMI settings or ITU LMI settings. ANSI LMI settings is the default. The format is (ANSI or ITU) LMI settings: *value*, *value*... *xx* seconds, where *value* can be:<br>n391dte—DTE full status polling interval (1..255)<br>n392dce—DCE error threshold (1..10)<br>n392dte—DTE error threshold (1..10)<br>n393dce—DCE monitored event count (1..10)<br>n393dte—DTE monitored event count (1..10)<br>t391dte—DTE polling timer (5..30 seconds)<br>t392dce—DCE polling verification timer (5..30 seconds) |
| LMI Statistics | (Extensive output only) Statistics about the link management.<br>Input—Number of packets coming in on the interface (*nn*) and how much time has passed since the last packet arrived. The format is Input: *nn* (last seen hh:mm:ss ago).<br>Output—Number of packets sent out on the interface (*nn*) and how much time has passed since the last packet was sent. The format is Output: *nn* (last sent *hh:mm:ss* ago). |
| Hold-times | Current interface hold-time up and hold-time down, in milliseconds. |

| Output Field | Output Field Description |
|---|---|
| Keepalive Input, Output | (Standard output only) Number of keepalive packets sent and received by PPP and how long ago the last keepalive packets were sent and received. |
| Keepalive settings | Configured settings for keepalives.<br>interval *seconds*—The time in seconds between successive keepalive requests. The range is 10 seconds through 32767 seconds, with a default of 10 seconds.<br>down-count *number*—The number of keepalive packets a destination must fail to receive before the network takes a link down. The range is 1 through 255, with a default of 3.<br>up-count *number*—The number of keepalive packets a destination must receive to change a link's status from down to up. The range is 1 through 255, with a default of 1. |
| Keepalive statistics | Information about keepalive packets.<br>Input—Number of keepalive packets received by PPP.<br>(last seen 00:00:00 ago)—Time since the last keepalive packet was received in the format *hh:mm:ss*.<br>Output—Number of keepalive packets sent by PPP and how long ago the last keepalive packets were sent and received.<br>(last seen 00:00:00 ago)—Time since the last keepalive packet was sent in the format *hh:mm:ss*. |
| LCP state | Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| NCP state | Specific PPP bits. Opened indicates that they have been initialized and opened, which means that the link is healthy. |
| Statistics last cleared | Time when the statistics for the interface were last zeroed. |
| CHAP state | Displays the state of the challenge-handshake protocol during its transaction.<br>Not-configured—CHAP was not configured on the interface.<br>Success—CHAP authentication was successful.<br>Fail—CHAP authentication failed.<br>Chap-Resp-received—Received response for the challenge sent, but not yet moved into the Success state. (Most likely with RADIUS authentication.)<br>Chap-Resp-sent—Response sent for the challenge received.<br>Chap-Chal-sent—Challenge sent.<br>Chap-Chal-received—Challenge received but response not yet sent. |
| Last Flapped | Date, time, and how long ago the interface went from down to up. The format is Last flapped : *year-month-day hour:minute:second* timezone (hour:minute:second ago). For example, Last flapped : 2002-04-26 10:52:40 PDT (04:33:20 ago). |
| Traffic statistics | Number and rate of bytes and packets received and transmitted on the physical interface.<br>Input bytes, Output bytes—Number of bytes received and transmitted on the interface.<br>Input packets, Output packets—Number of packets received and transmitted on the interface. |
| Input rate, Output rate | (Standard output only) Rate of bits (in bbs) and packets (in pps) received and transmitted on the interface. |

| Output Field | Output Field Description |
|---|---|
| Input errors | (Extensive output only) Input errors on the interface. The following paragraphs explain the nonobvious counters:<br>Errors—Sum of the incoming frame aborts and FCS errors.<br>Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism.<br>Invalid VCs—Number of cells that arrived for a nonexistent VC.<br>Framing errors—Sum of AAL5 packets that have FCS errors, AAL5 packets that have reassembly timeout errors, and AAL5 packets that have length errors.<br>Bucket Drops—Drops due to traffic load exceeding the interface transmit/receive leaky bucket configuration. The default is off.<br>Giants—Frames received that are larger than the giant threshold.<br>Runts—Frames received that are smaller than the runt threshold.<br>Policed discards—Frames that the incoming packet match code discarded because they were not recognized or of interest. Usually, this field reports protocols that the JUNOS software does not handle, such as CDP.<br>L3 incompletes—Increments when the incoming packet fails Layer 3 (usually IPv4) sanity checks of the header. For example, a frame with less than 20 bytes of available IP header would be discarded and this counter would increment.<br>L2 channel errors—This counter increments when the software could not find a valid logical interface for an incoming frame.<br>L2 mismatch timeouts—Count of malformed or short packets that cause the incoming packet handler to discard the frame as unreadable.<br>SRAM errors—This counter increments when a hardware error has occurred in the SRAM on the PIC. The value in this field should always be 0. If it increments, the PIC is broken.<br>HS link FCS errors—Number of errors on the high-speed links between the ASICs responsible for handling the router interfaces. |
| Output errors | (Extensive output only) Output errors on the interface. The following paragraphs explain the nonobvious counters:<br>Carrier transitions—Number of times the interface has gone from down to up. This number should not increment quickly, increasing only when the cable is unplugged, the far-end system is powered down and up, or a similar problem occurs. If it increments quickly (perhaps once every 10 seconds), then either the cable, the far-end system, or the PIC is broken.<br>Errors—Sum of the outgoing frame aborts and FCS errors.<br>Drops—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism.<br>Aged packets—Number of packets that remained in shared packet SDRAM for so long that the system automatically purged them. The value in this field should never increment. If it does, it is most likely a software bug or possibly broken hardware. |
| Active alarms and Active defects | T3 media-specific defects that can render the interface unable to pass packets. When a defect persists for a certain amount of time, it is promoted to an alarm. Based on the router configuration, an alarm can ring the red or yellow alarm bell on the router, or turn on the red or yellow alarm LED on the craft interface.<br>AIS—Alarm indicator signal.<br>EXZ—Excessive zeros.<br>FERF—Far-end failure.<br>IDLE—Idle alarm.<br>LCV—Line code violation.<br>LOF—Loss of frame.<br>LOS—Loss of signal.<br>PLL—Phase-locked loop out of lock.<br>YLW—Yellow alarm. Indicates errors at the remote site receiver. |
| DS3 media | (Extensive output only) Counts of T3 media-specific errors. |

| Output Field | Output Field Description |
|---|---|
| HDLC configuration | (Extensive output only) Information about the HDLC configuration.<br>Policing bucket—Configured state of the Rx policer.<br>Shaping bucket—Configured state of the Tx shaper.<br>Giant threshold—Giant threshold programmed into the hardware.<br>Runt threshold—Runt threshold programmed into the hardware.<br>Timeslots—Configured time slots for the interface.<br>Line encoding—Line encoding used. It is always HDB3. |
| Interface transmit queues | Names of the transmit queues and their associated statistics.<br>B/W—Queue bandwidth as a percentage of the total interface bandwidth.<br>WRR—Weighted round robin (in %).<br>Packets—Number of packets transmitted.<br>Drops—Number of packets dropped.<br>Errors—Number of packet errors. |
| DSU configuration | Information about the DSU configuration. The last three lines (Bit count, Error bit count, and LOS information) are displayed only if a BERT test has ever been run on the interface.<br>Compatibility mode—CSU/DSU compatibility mode. It can be None, Larscom, Kentrox, or Digital-Link.<br>Scrambling—Payload scrambling. It can be Enabled or Disabled.<br>Subrate—Configured subrate setting. Applies only when Digital-Link compatibility mode is used. It can be Disabled or display units in kbps. |
| Buildout | Buildout setting. |
| DS3 BERT configuration | BERT (Bit Error Rate Testing) checks the quality of the line. This output only appears when BERT is run on the interface (see “test interface bert-start” on page 459).<br>BERT time period—Configured total time period that the BERT test is to run.<br>Elapsed—Actual time elapsed since the start of the BERT (in seconds).<br>Induced error rate—Configured rate at which the bit errors are induced in the BERT pattern.<br>Algorithm—Type of algorithm selected for the BERT. |
| Packet Forwarding Engine configuration | (Extensive output only) Information about the configuration of the Packet Forwarding Engine:<br>Destination slot—FPC slot number.<br>PLP byte<br>Stream number—Stream used by the ASIC on the FPC.<br>CoS transmit queue—The queue number and its associated user-configured forwarding class name.<br>Bandwidth %—Percentage of bandwidth allocated to the queue.<br>Bandwidth bps—Bandwidth allocated to the queue (in bps).<br>Buffer %—Percentage of buffer space allocated to the queue.<br>Buffer Bytes—Number of bytes allocated to the queue. This value is only nonzero if the buffer size is configured in terms of time.<br>Priority—Queue priority. Possible values are low and high.<br>Limit—Displayed if rate limiting is configured for the queue. Possible values are none and exact. If exact is configured, the queue will only transmit up to the configured bandwidth, even if there is excess bandwidth available. If none is configured, the queue will transmit beyond the configured bandwidth if there is bandwidth available. |

| Output Field | Output Field Description |
|---|---|
| **Logical Interface** | |
| Logical interface, Index, SNMP ifIndex | Name of the logical interface, the logical interface's index number (which reflects its initialization sequence), and the logical interface's SNMP interface index number. |
| Flags | Information about the logical interface. Possible values are described in "Logical Interface Flags Field" on page 192. |
| Protocol | Protocol running on the logical interface, such as iso, inet6, mpls. |
| DLCI | If Frame Relay encapsulation is configured, the DLCI number of the logical interface. |
| Encapsulation | Encapsulation on the logical interface. |
| Traffic statistics | Total number of bytes and packets received and transmitted on the logical interface. These statistics are the sum of the local and transit statistics. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize.<br>Input rate—Rate of bits and packets received on the interface.<br>Output rate—Rate of bits and packets transmitted on the interface. |
| Local statistics | Statistics for traffic received from and transmitted to the Routing Engine. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize. |
| Transit statistics | Statistics for traffic transiting the router. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes a while (generally, less than 1 second) for this counter to stabilize. |
| MTU | MTU size on the logical interface. |
| Flags | Information about the protocol family flags. Possible values are described in "Family Flags Field" on page 192. |
| Generation | A unique number for use by Juniper Networks Customer Support only. |
| Route table | The address is located in this route table. For exampl, Route table:0 refers to inet.0. |
| Filters | Name of the firewall filters to be evaluated when packets are received or transmitted on the interface. The format is Filters: Input: *input-filter-name*, Output: *output-filter-name*. |
| RPF Failures: Packets: xx, Bytes: yy | The amount of incoming traffic (in packets and bytes) that failed a unicast Reverse Path Forwarding (RPF) check on this interface. |
| Destination class | List of the names of destination class usage (DCU) counters per family and per class for this interface. The counters display Packets and Bytes going to designated user-selected prefixes. |
| Source class | List of the names of source class usage (SCU) counters per family and per class for this interface. The counters display Packets and Bytes arriving from designated user-selected prefixes. |
| Policer | Policers to be evaluated when packets are received or transmitted on the interface. The format is Policer: Input: *type-fpc/pic/port*-in-policer, Output: *type-fpc/pic/port*-out-policer. |
| Addresses | Addresses associated with the logical interface. |
| Flags | Information about the address flags. Possible values are described in "Address Flags Field" on page 192. |
| Destination | IP address of the remote side of the connection. |
| Local | IP address of the logical interface. |
| Broadcast | Broadcast address. |

## show interfaces (standard) (for T3 interfaces)

```
user@host> show interfaces  t3-1/2/0
Physical interface: t3-1/2/0, Enabled, Physical link is Up
  Interface index: 81, SNMP ifIndex: 848
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: T3,
  Loopback: None, FCS: 16, Mode: C/Bit parity
  Device flags   : Present Running
  Interface flags: Link-Layer-Down Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive: Input: 45 (00:00:03 ago), Output: 45 (00:00:11 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-16 15:34:27 PDT (00:09:12 ago)
  Input rate     : 296 bps (0 pps)
  Output rate    : 48 bps (0 pps)
  Active alarms  : None
  Active defects : None

  Logical interface t3-1/2/0.0 (Index 9) (SNMP ifIndex 858)
    Flags: Device-Down Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 4470, Flags: None
      Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
        Destination: 10.20.111.0/30, Local: 10.20.111.2
```

## show interfaces brief (for T3 interfaces)

```
user@host> show interfaces brief t3-1/2/0
Physical interface: t3-1/2/0, Enabled, Physical link is Up
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: T3,
  Loopback: None, FCS: 16, Mode: C/Bit parity
  Device flags   : Present Running
  Interface flags: Link-Layer-Down Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive: Input: 45 (00:00:03 ago), Output: 45 (00:00:11 ago)
  Active alarms  : None
  Active defects : None

  Logical interface t3-1/2/0.0
    Flags: Device-Down Point-To-Point SNMP-Traps Encapsulation: PPP
    inet  10.20.111.2/30
```

## show interfaces detail (for T3 interfaces)

```
user@host> show interfaces detail t3-1/2/0
Physical interface: t3-1/2/0, Enabled, Physical link is Up
  Interface index: 81, SNMP ifIndex: 848, Generation: 80
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: T3,
  Loopback: None, FCS: 16, Mode: C/Bit parity
  Device flags   : Present Running
  Interface flags: Link-Layer-Down Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Hold-times     : Up 0 ms, Down 0 ms
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive statistics:
    Input : 45 (last seen 00:00:03 ago)
    Output: 45 (last sent 00:00:11 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-16 15:34:27 PDT (00:09:12 ago)
  Statistics last cleared: 2002-05-16 15:35:57 PDT (00:07:42 ago)
  Traffic statistics:
   Input  bytes  :                 2448                 296 bps
   Output bytes  :                 4415                  48 bps
   Input  packets:                   87                   0 pps
   Output packets:                  135                   0 pps
  Active alarms  : None
  Active defects : None

  Logical interface t3-1/2/0.0 (Index 9) (SNMP ifIndex 858) (Generation 9)
    Flags: Device-Down Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 4470, Flags: None, Generation: 17 Route table: 0
      Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
        Destination: 10.20.111.0/30, Local: 10.20.111.2, Broadcast: Unspecified,
        Generation: 20
```

## show interfaces extensive (for T3 interfaces)

```
user@host> show interfaces extensive t3-1/2/0
Physical interface: t3-1/2/0, Enabled, Physical link is Up
  Interface index: 81, SNMP ifIndex: 848, Generation: 80
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: T3,
  Loopback: None, FCS: 16, Mode: C/Bit parity
  Device flags   : Present Running
  Interface flags: Link-Layer-Down Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Hold-times     : Up 0 ms, Down 0 ms
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive statistics:
    Input : 45 (last seen 00:00:03 ago)
    Output: 45 (last sent 00:00:11 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-16 15:34:27 PDT (00:09:12 ago)
  Statistics last cleared: 2002-05-16 15:35:57 PDT (00:07:42 ago)
  Traffic statistics:
   Input  bytes  :                 2448                 296 bps
   Output bytes  :                 4415                  48 bps
   Input  packets:                   87                   0 pps
   Output packets:                  135                   0 pps
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 1, Bucket drops: 0,
    Policed discards: 0, L3 incompletes: 0, L2 channel errors: 0,
    L2 mismatch timeouts: 0, HS link CRC errors: 0, SRAM errors: 0
  Output errors:
    Carrier transitions: 0, Errors: 0, Drops: 0, Aged packets: 0
  Active alarms  : None
  Active defects : None
  DS3 media:            Seconds        Count  State
    PLL Lock                  0            0  OK
    Reframing                 0            0  OK
    AIS                       0            0  OK
    LOF                       0            0  OK
    LOS                       0            0  OK
    IDLE                      0            0  OK
    YELLOW                    0            0  OK
    BPV                       0            0
    EXZ                       0            0
    LCV                       0            0
    PCV                       0            0
    CCV                       0            0
    LES                       0
    PES                       0
    PSES                      0
    CES                       0
    CSES                      0
    SEFS                      0
    UAS                       0
  HDLC configuration:
    Policing bucket: Disabled
    Shaping bucket : Disabled
    Giant threshold: 4484, Runt threshold: 3
  DSU configuration:
    Compatibility mode: Digital Link, Scrambling: Disabled, Subrate: Disabled
    FEAC loopback: Inactive, Response: Disabled, Count: 0
```

```
  DS-3 BERT configuration:
    BERT time period: 10 seconds, Elapsed: 0 seconds
    Algorithm: Unknown (0), Induced error rate: 10e-0
  Packet Forwarding Engine configuration:
    Destination slot: 1, PLP byte: 1 (0x00)
    CoS transmit queue          Bandwidth          Buffer     Priority   Limit
                               %          bps   %        bytes
    0 best-effort              0            0   0            0      low    none
    1 expedited-forwarding     0            0   0            0      low    none
    2 assured-forwarding       0            0   0            0      low    none
    3 network-control          0            0   0            0      low    none

  Logical interface t3-1/2/0.0 (Index 9) (SNMP ifIndex 858) (Generation 9)
    Flags: Device-Down Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 4470, Flags: None, Generation: 17 Route table: 0
      Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
        Destination: 10.20.111.0/30, Local: 10.20.111.2, Broadcast: Unspecified,
        Generation: 20
```

## show interfaces media (for T3 interfaces)

```
user@host> show interfaces media t3-1/2/0
Physical interface: t3-1/2/0, Enabled, Physical link is Up
  Interface index: 81, SNMP ifIndex: 848
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: T3,
  Loopback: None, FCS: 16, Mode: C/Bit parity
  Device flags   : Present Running
  Interface flags: Link-Layer-Down Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive: Input: 45 (00:00:03 ago), Output: 46 (00:00:00 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-16 15:34:27 PDT (00:09:12 ago)
  Input rate     : 296 bps (0 pps)
  Output rate    : 48 bps (0 pps)
  Active alarms  : None
  Active defects : None
  DS3 errors:
    BPV: 0, EXZ: 0, LCV: 0, PCV: 0
    CCV: 0
```

## show interfaces statistics (for T3 interfaces)

```
user@host> show interfaces statistics t3-1/2/0
Physical interface: t3-1/2/0, Enabled, Physical link is Up
  Interface index: 81, SNMP ifIndex: 848
  Link-level type: PPP, MTU: 4474, Clocking: Internal, Speed: T3,
  Loopback: None, FCS: 16, Mode: C/Bit parity
  Device flags   : Present Running
  Interface flags: Link-Layer-Down Point-To-Point SNMP-Traps
  Link flags     : Keepalives
  Keepalive settings: Interval 10 seconds, Up-count 1, Down-count 3
  Keepalive: Input: 45 (00:00:03 ago), Output: 46 (00:00:00 ago)
  LCP state: Opened
  NCP state: inet: Opened, inet6: Not-configured, iso: Not-configured, mpls:
  Not-configured
  CHAP state: Not-configured
  Last flapped   : 2002-05-16 15:34:27 PDT (00:09:12 ago)
  Statistics last cleared: 2002-05-16 15:35:57 PDT (00:07:42 ago)
  Input rate     : 296 bps (0 pps)
  Output rate    : 48 bps (0 pps)
  Input errors: 1, Output errors: 0
  Active alarms  : None
  Active defects : None

  Logical interface t3-1/2/0.0 (Index 9) (SNMP ifIndex 858)
    Flags: Device-Down Point-To-Point SNMP-Traps Encapsulation: PPP
    Protocol inet, MTU: 4470, Flags: None
      Addresses, Flags: Dest-route-down Is-Preferred Is-Primary
        Destination: 10.20.111.0/30, Local: 10.20.111.2
```